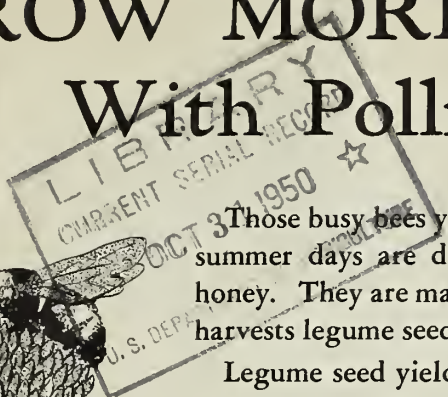


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GROW MORE LEGUME SEED With Pollinating Insects



Those busy bees you see in legume fields on warm summer days are doing much more than making honey. They are making money for the farmer who harvests legume seed.

Legume seed yields generally have been reduced to about one-fourth of what they once were. Lack of pollinating insects is the main reason. Tests show that you can increase seed yields 3 to 15 times if you have enough bees.



Legume seeds are badly needed for meadow seedings in soil-conserving crop rotations and pasture improvement. All of the following legumes are greatly benefited by insect pollination:

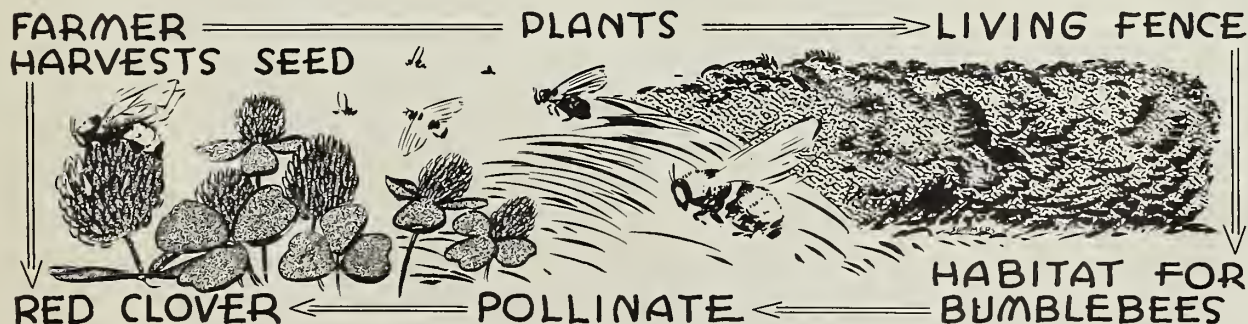
Alfalfa	Ladino clover	Sweetclover	Birdsfoot trefoil
Alsike clover	Red clover	White clover	Hairy vetch

WILD BEES ARE GOOD POLLINATORS

Years ago wild bees did most of the pollinating. But intensive cropping, cleaning up of fence rows, and uncontrolled burning have destroyed their homes and greatly reduced their number. Wild bees are the most efficient pollinators, especially for alfalfa.

You can increase the number of wild bees on your farm by protecting the following kinds of land from grazing and burning:

Drainage ditch banks	Pond areas
Fence rows	Shelterbelts and windbreaks
Field borders	Streambanks
Odd areas	Wood lots



UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service, Upper Mississippi Region, Milwaukee, Wis.



HONEYBEES CAN HELP TOO

If there are not enough wild bees on your farm, you may want to put some honeybees near your legume fields. Field trials have shown that honeybees help increase legume seed yields. Unlike wild bees, you can have as many honeybees as you need just where you need them.

To get the most help from honeybees you should:

- (1) **PROVIDE CONTINUOUS FOOD SUPPLIES.**—Colonies should have plenty of food within the hive at all times. A bee starves to death after 1 day without food. If honey is not available in the hive, feed sugar sirup. Plenty of maples, willows, elms, dandelions, and other early blooming wild flowers enable the bees to build up to full strength by the time the legumes come into bloom. There is generally a period of scarcity after that until smartweed, goldenrod, asters, and other fall flowers finish out the season.
- (2) **ELIMINATE COMPETING PLANTS.**—Bees like some plants better than others. They prefer sweetclover over red clover or almost any other plant. If attractive competing plants are nearby it is necessary to have the bees in the field they are to pollinate. In some cases you may find it necessary to eliminate the competing plants by mowing. This, however, may become too much of a job or may involve property of others.
- (3) **PLACE THE BEES CLOSE TO THE FIELD.**—Seed yields are highest if you place the beehives within the field to be pollinated. Best yields will be obtained if every part of the field is within 300 feet of a hive. Good seed increases will be obtained by placing the bees within $\frac{1}{4}$ mile of the field. Bees should not be moved into a field until there is enough bloom to attract them.
- (4) **PROVIDE ENOUGH BEES.**—Have at least two colonies of bees for every acre of legumes to be pollinated. For every additional hive up to five per acre, you can expect substantial increases in seed production.
- (5) **CONTROL HARMFUL INSECTS.**—Use insecticides to control leafhoppers. Insecticides must be applied while legumes are in the bud stage to prevent serious losses of the bees and other pollinating insects.
- (6) **REGULATE CUTTING.**—For most legumes the second cutting is best for seed production—the plants bloom when pollinating insects are most abundant and when weather conditions are best. For alfalfa, you should divide the field into 3 or 4 parts and allow 8 to 10 days between the cutting of each part. This will lengthen the blooming season to 30 or 40 days.

If you don't want to become a beekeeper yourself, you may find it profitable to make arrangements with a local commercial beekeeper for the services of his bees.